

# BUILDING THE VISION

A Series of AZTech ITS Model Deployment Success Stories for the Phoenix Metropolitan Area

## NUMBER TWO

### A Great Deal

#### Integrating and Upgrading Three Signal Systems for the Price of One

##### **The Challenge:**

For AZTech, coordination is critical. To achieve the full integration of varied traffic management, emergency services and transit systems in the sprawling Valley of the Sun metropolitan area, no small amount of coordination is required.

In the interest of smoothing vehicle traffic that crosses municipal boundaries, AZTech promotes the coordination of traffic signal systems between neighboring cities. The Town of Paradise Valley, the smallest AZTech municipal partner in terms of population, was not equipped with a central control for its 12 recently modernized traffic signals. Its neighbors, Scottsdale and Phoenix, each operate a computerized, central-control traffic system. To accurately coordinate signals between these disparate systems would be next to impossible. On the other hand, building a central-control system for Paradise Valley would be an expensive undertaking. To attain the desired coordination between its partners, AZTech was charged with developing a cost-effective solution for making the signal system of Paradise Valley compatible with its neighbors' state-of-the-art systems.

##### **The Solution:**

Through cooperation and collaboration, AZTech was not only able to achieve the desired result, but also receive excellent value for its investment in the process. The key to this feat was an innovative solution for integrating the Scottsdale and Paradise Valley traffic signal systems.

The City of Scottsdale had installed its new central-control system the previous year. However, in order to achieve full functionality with the AZTech system, a modification necessitating a minor upgrade would be required. AZTech also hoped to attain full functionality with Paradise Valley's traffic signals.

The answer was to provide for the required upgrade to the Scottsdale central-control system and then physically connect the Paradise Valley traffic signals to the Scottsdale system. Software was developed to provide the functionality that would link the Scottsdale system with AZTech. "The software does a number of things. One of the basic things it does for Paradise Valley is to give them a central control to allow them to synchronize their traffic signals," said Bob Steele, signal systems analyst for the City of Scottsdale's Transportation Department. "It also creates an interface between AZTech, Scottsdale's signal system and Paradise Valley's signal system so that we can communicate and share information."

Paradise Valley also received an operator work station that would allow them to monitor and control their own signals. "Paradise Valley effectively has gained an integrated traffic signal system, but it's operating off the Scottsdale system for a very low cost," said Jim Decker, AZTech smart corridor coordinator. "At the same time, we were able to upgrade the Scottsdale system to a more modern computer platform and software. All parties benefited."

(OVER)

Page 2

Building the Vision – Number Two

The benefits didn't stop there. The City of Phoenix was at the time installing a central-control system with a computer platform identical to the upgraded Scottsdale system. Therefore, the software development work being done to provide the Scottsdale system with full AZTech functionality would do the same for the Phoenix system. By importing the software to Phoenix, AZTech gained an invaluable connection to a third signal system.

### **The Benefits:**

"Scottsdale, Paradise Valley and Phoenix all received state-of-the-art upgrades with AZTech functionality for the cost of one upgrade," said Pierre Pretorius, AZTech program manager. "So we're killing three birds with one stone."

All three municipalities reaped the benefits of collaborating and coordinating through AZTech. Paradise Valley received a computerized signal system that routinely costs several hundred thousand dollars. Scottsdale and Phoenix both received upgrades to their new systems. All of which was achieved at no cost to the cities, as AZTech footed the bill for the upgrade. "Having more than one municipality in the metropolitan area using the same software gives us some clout," said Monica Beeman, City of Phoenix traffic engineer. "Because each of us is going to use that same software, it cut down the cost by three."

Additionally, Paradise Valley has not had to assume the expense of operating and maintaining its new signal system, as those services are provided by Scottsdale. "Paradise Valley has a long relationship of cooperating and sharing resources with Scottsdale," said John Wintersteen, Paradise Valley chief of police. "And Scottsdale has for many years performed our traffic signal maintenance. So there's certainly some advantages to being closely tied with Scottsdale on this project, since they're our backup and will handle major repair for our signal system."

By integrating their traffic signal systems into the AZTech system, each city receives additional benefits. Through AZTech, the municipal systems are linked with the Traffic Operations Center (TOC) of the Arizona Department of Transportation (ADOT). Although the municipalities don't typically monitor and control their signal systems on a 24-hour basis, they can now receive after-hours control services from the ADOT TOC. The AZTech structure features a system of peer-to-peer with permissive control, meaning that any operations center (such as a municipality) can grant permission to another operations center (such as the TOC) to operate their system or selected functions of it.

"This is a very good example of how AZTech uses its collective strength to benefit its public partners," said Dan Powell, AZTech chief administrator. The general public is the ultimate beneficiary of such inter-agency coordination. The savings of taxpayer dollars is significant. And better coordination among the signal systems of neighboring cities means smoother commuting for motorists crossing municipal boundaries. The computerized central-control also ensures that any problem that may arise with a signal will be handled faster and much more efficiently. Previously, a signal failure would generally be reported by the public, and a technician would have to be dispatched to the signal location. The new system automatically reports all signal failures to the operator on duty, who frequently can diagnose and correct the problem directly from the control center.

**As an international showcase for state-of-the-art Intelligent Transportation Systems, the AZTech Model Deployment Initiative has documented numerous success stories. To learn more, visit the AZTech home page on the Internet at <http://www.azfms.com>.**